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ENTRY DECISIONS IN THE INTERNATIONAL EXPANSION PROCESS OF RETAIL CHAINS: DO THEY MATTER IN THE LONG RUN?

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Abstract

The retailing industry, in the United States and Europe alike, faces maturing markets and stiffening domestic competition. In response, many of the industry's main players have shown a growing interest in cross-border initiatives. The success of such foreign entries obviously depends on the appropriateness of the firm's post-entry decisions, but may also depend on the strategic choices made at the time of entry, as they shape the platform from which competitive advantages can be gained. Little empirical evidence is available, however, on the relative impact of these time-of-entry choices, especially in the longer run.

In this paper, we simultaneously consider five strategic entry decisions: order, size of entry, mode of entry, the level of format adaptation and the extent of format diversification. We assess their relative impact on the foreign operations' long-run performance, while controlling for both the parent firm's resources and the host-market's intrinsic attractiveness. Formally, the strategic choices and control variables are linked to the asymptotic performance level in a pooled Gompertz growth model, that is calibrated on a unique data set covering the post-entry performance of over 160 foreign entries made by Europe's top 75 food retailers.

The empirical findings suggest that several of the decisions made at entry continue to influence the foreign entry's future performance, both in terms of sales performance and in terms of efficiency. Especially the timing of entry and the novelty of the retailing format to the host market are found to be critical long-run success factors. The choice of retail format could be dictated by demand considerations (adaptation to host-market conditions) or by supply considerations (expertise in the home market). Ideally, both will suggest the same format; if not, our findings indicate a greater importance of the former, irrespective of the performance dimension considered.

1. INTRODUCTION

Faced with maturing markets and stiffening competition, the retailing industry in both Europe and the United States has been forced to rethink and restructure itself in order to preserve its competitive position (Corstjens and Doyle 1989). In search of new opportunities, an important strategic option that can be taken is diversification, which can take place along two dimensions: across product boundaries and/or across market boundaries (Ansoff 1956). The first dimension is reflected in the ongoing search for new store formats and/or new and broader store assortments. Still, to avoid a pure market-share game in increasingly saturated domestic markets, retailers are also forced to look for new geographical markets (Kalish 1999).

This may partly explain the recent growth in the number of cross-border initiatives by retail firms (Mulhern 1997): the world's 100 largest retailers are growing twice as fast abroad as domestically, and the 35 largest global retailers are each entering an average of one new market every year (Higgins 1997). Notwithstanding this evolution, retailers are still struggling to develop the competencies needed to compete in the global arena (Kumar 1997; The Economist 1999). While the success of foreign entries depends on the appropriateness of the firm's post-entry decisions (Audretsch and Mahmoud 1995), the strategic choices made *at the time of entry* have been argued to also be of great importance, as they shape the platform from which competitive advantages can be gained, and hopefully sustained, over the subsidiary's life cycle (Gatignon, Weitz and Bansal 1990; Green, Barclay and Ryans 1995; Root 1987). Still, relatively little empirical research is available on the *relative* contribution of different strategic choices at entry on post-entry performance, especially in the *longer run* (Feeser and Willard 1990; Sharma and Kesner 1996).

Within an international expansion context, a number of strategic choices can, apart from the market-selection decision, be distinguished, such as: (1) the time or order of entry (i.e., when a potential target market is entered), (2) the size of entry (i.e., the size of the initial investment made during the entry process), (3) the mode of entry (e.g., acquisition versus greenfield investment), (4) the level of product adaptation to local market conditions, and (5) the extent of product diversification involved in the foreign market entry (Day 1986; Kotabe and Helsen 1998). In this paper we investigate whether,

and to what extent, the choices retail firms make along these dimensions at the time of entry affect the long-run post-entry performance of their foreign operations.

Our research differs in a number of ways from previous studies on post-entry performance. First, previous work has mostly concentrated on the impact of a particular strategy component.[1] The first-mover literature, for example, has concentrated on the effect of timing on post-entry performance (see, e.g., Brown and Lattin 1994; Robinson and Fornell 1985). A number of studies in industrial organization have investigated the relationship between entry size and subsequent firm growth (e.g., Audretsch 1995; Boeri and Bellman 1995). Within the international business literature, considerable attention has been devoted to the mode of entry (e.g., Anderson and Gatignon 1986; Sharma 1998) and the level of product standardization (Evans 1987). As these respective components have typically been studied in isolation, little is known on their *relative* impact in shaping post-entry performance. To the best of our knowledge, no previous study has looked simultaneously at all five aforementioned aspects of the international expansion process.

Second, attention is focused on the *long-run* performance consequences of these strategic choices. In previous studies, (long-term) post-entry performance has mostly been assessed at one particular point in time, ranging from one to two years after entry in a new product/brand introduction context (e.g., Gatignon et al. 1990) to a high of 10 years after entry in new technology/venture settings (e.g., Mascarenhas 1992a). Not only is this time choice quite arbitrary, we will also argue that the resulting findings are either applicable to the short run only (when working with a limited observation window), or do not make full use of all available information (e.g., when only considering entries that took place many years ago). In this paper, we investigate to what extent strategic choices at the time of entry continue to influence a subsidiary's performance, even as $t \rightarrow \infty$, by fitting a Gompertz growth curve to the data and linking the estimated asymptotic performance to the initial strategic choices. In the process, we control for both the firm's resources and the attractiveness of the selected markets, since many other factors, aside from the initial entry decisions, have been shown to affect post-entry performance (see, e.g., Audretsch and Mahmoud 1995; Green et al. 1995). A failure to account for them could attribute undue influence to the firm's strategic entry decisions.

Finally, our work differs from previous studies by its focus on international entry decisions in the European retailing industry. Most previous entry studies have considered international entry decisions into North-American markets (see, e.g., Audretsch 1995; Baldwin and Rafiquazzaman 1995; Brown and Lattin 1985; Dunne, Roberts and Samuelson 1989). The scope of our data set, with entries in more than 20 West- and Eastern European markets, allows us to generalize and expand upon these previous findings. Moreover, previous studies have mostly been conducted in consumer goods industries. Lieberman and Montgomery (1988) make a case for more research on the impact of entry strategies in *service* industries (see also Song et al. 1999). Some studies have answered this call over recent years (e.g., Mascarenhas 1992, 1997 for offshore oil drilling), but none has systematically investigated the retail sector. Our data set covers all international expansion decisions made since the late 1980s towards Eastern and Western European countries by the 75 largest European grocery retailing firms, and ensures variability along multiple dimensions: country of origin, choice of target country and trade region (developed versus emerging), firm competencies (as reflected in differing firm sizes, assortment composition, and levels of international expertise) and five strategic choices: order, size and mode of entry, the level of product adaptation, and the extent of product diversification.

The remainder of the paper is organized as follows. The conceptual framework and the ensuing hypotheses are developed in Section 2. Section 3 introduces the modeling technology, and Section 4 contains a detailed discussion on our database. Section 5 presents our empirical findings that are validated in Section 6. Section 7 concludes with managerial implications of the findings and some areas for future research.

2. HYPOTHESIS DEVELOPMENT

A basic premise of entry-strategy research is that the strategic decisions of the firm at entry continue to affect the post-entry performance of its foreign subsidiaries, even in the long run (Cooper 1979; Feeser and Willard 1990; Green et al. 1995; Li 1995). These decisions are not only hard to reverse; they also tend to shape the tactical options available to the company after entry (Sharma and Kesner 1996). In Section 2.1., we will discuss the hypothesized impact of five different entry decisions.

To properly evaluate the long-term impact of entry decisions on post-entry performance, we must take into account that the "strategic window" does not open at the same time for all players involved (Abell 1979). Not all retail firm have the same resources to back their new ventures, and opportunities in different host markets may both differ and change over time. While the focus of our study is on the impact of different entry-strategy decisions, we will control for several other factors to better assess the entry decisions' relative contribution (see, e.g., Gatignon et al. (1990) for a similar conceptual approach). The controlling variables we consider in this study are introduced in section 2.2.

2.1. Strategic entry decisions

Order of entry. A substantial body of literature has documented the positive impact of (early) entry timing on subsequent performance (see, e.g., Kalyanaram et al. 1995). Most of the work in this area has been devoted to the introduction of new *products* in *domestic* markets, and less to how first-mover advantages translate into an international context (Lieberman and Montgomery 1998). Some positive evidence is provided by Mascarenhas (1992a, 1997), who demonstrates that new products perform better in an international market if they are introduced early. A second "bias" in previous first-mover research is the focus on product introductions and the relative neglect of services (Lieberman and Montgomery 1998). The latter is unfortunate, as managers of manufacturing firms have been found to view pioneering risks as more important than their counterparts in service industries, and as some of the often cited causes of pioneering advantages, such as cost and differentiation advantages, may be more relevant in a manufacturing context than to service firms (Song et al. 1999). Still, in a recent survey, managers also expect the pioneer to have performance advantages in the services sector (Song et al. 1999), and thus we hypothesize:

H1: Early entry in foreign market results in higher long-run post-entry performance abroad.

Size of entry. A variety of reasons may cause a positive relationship between entry size and post-entry performance. First, large-scale entry may induce volume-driven cost advantages. The greater the size of the initial set-up, the less growth is needed before the minimum-efficient scale (MES) of the industry is obtained (Biggadike 1979). Second, large-scale entry (e.g., with many outlets) may ensure pre-emption of the more attractive locations in both geographic (location of the outlets) and perceptual (product characteristics) space (Lieberman and Montgomery 1988). Third, incumbents are less likely to react aggressively when the entrant has made substantial hard-to-reverse investments, and other potential entrants may be less inclined to actually enter the market afterwards. The size of the entry is therefore used as a signal of managerial commitment (Sharma 1998; Sharma and Kesner 1996). Fourth, entrants holding more positive expectations are likely to make larger initial commitments (Caves 1998). As such, entry size may reflect the entrant's performance expectations, and may already capture an option for further expansion. Finally, start-up size can reflect the ability of the entrant to attract financial resources, that may in turn be a proxy for its future growth potential (Audretsch 1995). Based on the above arguments, we hypothesize:

H2: Large-scale entry in a foreign market results in higher long-run post-entry performance abroad.

Mode of entry. A firm seeking to operate abroad must seek the most appropriate mode, or institutional arrangement, for the new host market entry (Anderson and Gatignon 1986). Modes of entry differ in the degree of control the parent firm maintains over its foreign operations. In this study, we consider three potential modes of entry: (1) acquisition, (2) joint venture, and (3) greenfield expansion.

Wilson (1980) and Delacroix (1993) find that entries through acquisition have a higher post-entry failure rate than entries through new ventures (i.e., greenfield expansion). This is typically attributed to (1) difficulties of integrating the acquired businesses into the parent system (see, e.g., Jemison and Sitkin 1986), and (2) less managerial commitment to acquired outlets than to the ones management initiated (Li 1995; Wilson 1980). As with acquisitions, entry through joint ventures involves the

integration of at least two corporate cultures. Moreover, joint ventures may not only be troubled by differences in organizational culture, but also by difficulties in sharing property assets (Buckley and Casson 1988; Kogut and Singh 1988). Hence, the implementation of strategies and the co-ordination of actions may be more difficult with joint ventures, resulting in higher costs of control. We therefore hypothesize:

H3: Entry through modes characterized by lower integration and costs of control (greenfield expansion) are expected to result in a higher long-run, post-entry performance than modes that have higher integration (acquisition, joint venture) and/or control costs (joint venture).

Product/format adaptation. The retail structure still differs greatly across national boundaries (Eurostat 1998). Whereas the hard-discount format is widely accepted by German consumers (reflected in a market share exceeding 50%), it only represents a marginal share in markets such as the U.K. and France (a share of 5 to 10 percent). The hypermarket format is the most popular store concept in France, whereas in the Netherlands it is almost non existing. Given these differences, the question arises whether a retailer should adapt his store concept to the existing retail culture in the host market.

According to the export literature, innovative products have a better chance at developing strong export sales (see, e.g., Biggadike 1997; McGuiness and Little 1981). Once could thus argue that retailers entering with store formats that are new (or less familiar) to the host market are expected to perform better. But it is also argued that products should be adapted to the new host market (Cooper and Kleinschmidt 1985; Dominguez and Sequiera 1992; Levitt 1983), implying that store formats that conform to local shopping and store-choice behavior will yield better post-entry performance. Based on the above, we posit the following alternative hypotheses:

H4a: Entry with store formats that are less familiar to the host market results in higher long-run, post-entry performance abroad.

H4b: Entry with store formats that are more familiar to the host market results in higher long-run, post-entry performance abroad.

Product/format diversification. The more remote the foreign operations are from the firm's core product or business, the greater the uncertainty involved. In addition, the previously acquired expertise may not be directly transferable to the new setting (Caves 1982; Cooper 1986; Feeser and Willard 1990). While we restrict our attention to entries in the same line of business (grocery retailing), we do observe considerable variation in the choice of format. In the retailing industry, the strategic positioning of the service rendered to both suppliers and consumers is closely linked to the store format, such as hypermarket, supermarket or discount (Levy and Weitz 1998). To reduce the uncertainty involved, and to benefit as much as possible from the parent firm's commercial and logistic experience, the parent firm may want to enter foreign markets with the store format with which it is most familiar (Li 1995). We therefore hypothesize:

H5: Long-run, post-entry performance will be better when firms enter with their most familiar store format.

The parent firm's most-familiar format (which reflects a supply-side consideration) may not correspond with the one least/most accepted by the host market (which reflects a demand-side consideration), in which case conflicting recommendations to the retail manager will emerge from H4 and H5. This illustrates the importance of quantifying the relative contributions of the different entry decisions towards the subsidiary's long-run performance.

2.2. Control variables

As mentioned, the long-term effectiveness of entry decisions will not be tested in isolation; we will correct for firm and environmental conditions. We present a brief motivation on the expected impact of both types of influences.

2.2.1. Parent-firm resources and skills

The resource bases taken into consideration in this study are (1) the retailer's size, (2) the scope of his international experience, and (3) his assortment policy.[2]

Firm size **(+).** Entrants are expected to perform better when their parent firm possesses the skills and resources critical for competitiveness vis-à-vis incumbents and other potential new entrants (Montgomery and Hariharan 1991; Rumelt 1986; Sharma and Kesner 1996). As larger firms tend to have more market power, and as they enjoy economies of scale and scope in their supplier management and information collection/ processing (Mascarenhas 1992; Tan and Vertinsky 1996), they can be expected to perform better.

International experience **(+/-).** Firms that already have international experience may be able to capitalize on these experiences when entering other markets (Johansson and Valhne 1977; Li 1995; Mascarenhas 1997). Previous work suggests that organizational learning through experience may reduce the risks involved in new entries, and benefit subsequent performance and survival probability. Alternatively, one could argue that firms operating in many markets have numerous expansion possibilities, and will have to spread their limited (managerial and/or financial) resources across a broader set of options (Sharma and Kesner 1996). This spreading of resources may negatively impact the performance of the individual foreign entries.

Assortment policy: private label share **(-).** An important evolution in the retailing industry is the growth of store brands (Mulhern 1997). To reduce supplier power, and to differentiate themselves from their domestic competitors in ever more concentrated markets, retailers increasingly launch their own brands to "own" their local markets (Steenkamp and Dekimpe 1997). Investments in the development of a private label offering not only reflect a commitment to the local (domestic) market, but may also limit the resources available for foreign expansion (Sharma and Kesner 1996). In addition, when they want to carry manufacturer-branded products in the foreign markets, retailers with a large private-label share often have a harder time in the negotiations with their suppliers than other retailers (Kumar 1997). Finally, from the consumer's point of view, retailers who rely heavily on private labels not only have to convince the host population

to switch stores, but to also switch brands (Kumar 1997). These retailers are therefore expected to perform worse in new host markets.

2.2.2. Host market characteristics

The intrinsic attractiveness of the host market is captured in three ways: (1) the size of its population, (2) the purchasing power or wealth of its inhabitants, and (3) its competitive structure.

***Population* (+).** Market size is often used as a proxy for the economic rationale of foreign market entry. Not only are retail sales closely linked to the number of people living in a given servicing area, the average cost of serving larger markets will typically be smaller and decrease faster than when servicing smaller markets (Davidson 1980).

***Wealth* (+).** Post-entry performance is expected to be related to a country's wealth and stage of economic development (Antonelli 1993; Dekimpe, Parker and Sarvary 1999). Specifically, international expansion in the retailing sector has been argued to be closely linked to the evolution (in size and income level) of the middle class in the host market (Higgins 1997; Kalish 1999; Woodard 1996).

***Concentration* (+/-).** It has been argued that intense competition and rivalry in the host market not only serves as a barrier to entry, but also affects the post-entry performance of firms that try to overcome this barrier (Lambkin 1992). In general, it is predicted that the larger the number of firms and the more equal their size, the higher the likelihood of intense rivalry (Porter 1980). As such, the most favorable environment would be one in which there are relatively few players, with one or a few of them dominant. In such highly concentrated markets, competition in both the purchase and sales market is expected to be less intense and more orderly (Galbraith and Stiles 1983), which should benefit post-entry performance. On the other hand, entrants can be expected to face stronger competitive retaliation in industries where (a) a few large players have a greater stake in the industry (i.e., in highly concentrated industries), and (b) there is a higher potential for coordinated action of the incumbents (Sharma and Kesner 1996). Apart from the relationship between concentration and competitive reactivity, the incumbents' concentration also reflects their reputation with the customer population, as each of the

incumbents is then able to command a larger share of customer demand (Kreps and Wilson 1982).

3. METHODOLOGY

3.1. Long-run performance

Previous studies have measured post-entry performance at different points in time, varying from a low of one to two years after entry (Gatignon et al. 1990) to a high of over ten years (Mascarenhas 1992), depending on the type of product/market entry under investigation. Both approaches result in a loss of useful information. The former only uses performance information shortly after the initial entry, and ignores the additional information on entries that took place a longer time ago. This information is particularly relevant given our interest in the *long-run* performance consequences of the entry decisions. Only using information on entries undertaken a long time ago neglects all information on the more recent entries, and causes a reduction in sample size. Some authors have addressed the issue by using the last available performance observation for every entry (see, e.g., Mascarenhas 1992b). This approach, however, is likely to compromise the comparability of performance estimates across entries of different length, as one might deal with entries in a different stage of their life cycle (Dekimpe et al. 1998).

In this study, we operationalize long-run post-entry performance as the asymptotic performance level of a growth curve (the Gompertz model) fitted to an entry's over-time performance data. In estimating these growth curves, we incorporate all available data points, and by focusing on the estimated asymptotic performance level, the measure becomes time independent (Dekimpe and Hanssens 1999). In this way, we ensure the comparability of the estimates across entries with different starting dates.

Conceptually, our approach is related to e.g., Dekimpe et al. (1998), Parker and Gatignon (1994, 1996) and Shankar et al. (1998), who relate the market-potential parameter in the Bass diffusion model to a set of predictor variables. The major difference between the adopted growth curves and (Bass-type) diffusion models is philosophical in nature, as pointed out by Rao (1985). Diffusion models derive from the theory of adoption and diffusion of innovations in social systems that can be driven

through word-of-mouth communication or external media (see, e.g., Rogers 1983). As this distinction and the underlying theories are less suited to explain the expansion through international subsidiaries in the retail sector, diffusion-type models are considered less appropriate to describe the phenomenon at hand.[3]

Growth curves have been used to model and forecast the evolution of a variety of phenomena (see, e.g., Banks 1991 for a review), including the development of new markets (e.g., Meade and Islam 1995; Rao 1985) and the evolution of new product sales (Franses 1994). They typically involve the use of 3 to 4 parameter models to write the evolution of a performance measure as a deterministic function of time. One of the more popular and better performing (Meade and Islam 1995, 1998) models is the Gompertz curve. For the performance evolution of a given entry, the model specification is given by:

$$P_{ijt} = P^*_{ij} \quad \exp\left(-b\, e^{-ct}\right), \tag{1}$$

where P_{ijt} expresses the performance level in period t of an international entry by retailer i in market j, P^*_{ij} is the saturation level, and b and c are parameters characterizing the rate of growth and the point of inflection (Franses 1994). Equation (1) can be shown to be the solution to the following differential equation (Chow 1967):

$$dP_{ijt} / dt = \gamma\, P_{ijt}\ (\log P^*_{ij} - \log P_{ijt}), \tag{2}$$

with γ a proportionality constant. This differential equation reflects the intuitively appealing notion that an entry's performance growth (and hence, future performance levels) is proportional to (1) its current performance, and (2) the remaining difference between that current performance level and the asymptotic, long-run performance level. Approximating $[dP_{ijt}/dt]/P_{ijt} = d\log(P_{ijt})/dt$ by the discrete difference $\log P_{ijt} - \log P_{ijt-1}$, and $\log P_{ijt}$ at the right-hand side of the equation by $\log P_{ijt-1}$, the following equivalent representation of the Gompertz model is obtained (Chow 1967; Franses 1994):

$$\log P_{ijt} - \log P_{ijt-1} = \alpha\, [\log P^*_{ij} - \log P_{ijt-1}], \tag{3}$$

with α=[1-exp(-c)], and P^*_{ij} the key construct of interest: the asymptotic, long-run performance level.

3.2. Over-time variations in long-run performance

As more information becomes available, the asymptotic performance level can be updated, in which case P^*_{ij} can be written as P^*_{ijt}, the asymptotic performance level based upon information up to point t. Following Chow (1967) and Franses (1994), one can write the resulting time series as a function of explanatory or driving variables, that could, in our context, reflect parent-firm resources and skills $F_{k,it}$ (k=1,…,K) and/or host-country characteristics $C_{l,jt}$ (l=1,…,L). When written in log-log form, one obtains:

$$log\, P^*_{ijt} = \beta_0 + \sum_{k=1}^{K} \beta_k\, log(F_{k,it}) + \sum_{l=1}^{L} \beta_{K+l}\, log(C_{l,jt}), \qquad (4)$$

Upon substitution of (4) into (3), the following estimation equation is obtained:

$$\log P_{ijt} - \log P_{ijt-1} = \alpha\beta_0 + \sum_{k=1}^{K} \alpha\beta_k \log(F_{k,it}) + \sum_{l=1}^{L} \alpha\beta_{K+l} \log(C_{l,jt}) - \alpha \log P_{ijt-1} + e_{ijt}, \qquad (5)$$

where e_{ijt} is assumed to be a standard white-noise variable. Equation (5) is nonlinear in the parameters, and therefore calibrated by non-linear estimation techniques.

3.3. Across-entry variations in long-run performance

To determine to what extent the asymptotic performance levels are a function of the initial strategic entry decisions by firm i when entering market j, we pool the observations across all entries, and augment Equation (4) (and after substitution also Equation 5) with the (log of) the strategic decision variables $S_{m,ij}$ (m = 1…M).[4] This pooling, that is similar to the one carried out by Dekimpe et al. (1998) and Van den Bulte (1999), raises two additional issues. First, our data set covers international entries by approximately 40 retail firms in over 20 target markets, causing our observations to be stratified by firm and by host market. In such a pooled data set, the errors of the observations belonging to one firm and/or market may be correlated due to omitted variables, and a pooling bias

may emerge (Hsiao 1986). To account for this stratification, a fixed-effects correction was used which resulted in the addition of firm (FD_i) and host-country (CD_j) dummy variables to Equation (4) (see e.g. Gatignon, Weitz and Bansal 1990 for an in-depth discussion). Second, our parent-firm and target-country control variables (i.e., the $F_{k,it}$ and $C_{l,jt}$ in Equation 4) can now vary both over time (t) and across firms (i) or countries (j). To separate the explanatory power of these control variables at the time of entry (as they reflect the market-selection decision) from their subsequent within-entry variation, we replace $\log(F_{k,it})$ and $\log(C_{l,jt})$ in Equation (4) by two sets of variables: (1) their time-invariant value at the time of entry t=0 (i.e., $\log(F_{k,i0})$ and $\log(C_{l,j0})$), and (2) their time-variant deviations from these initial values: $[\log(F_{k,it})-\log(F_{k,i0})]$ and $[\log(C_{l,jt})-\log(C_{l,j0})]$ (see Diggle et al. (1995) for a technical discussion, or Vanden Bulte (1999) for a similar conceptualization). After the aforementioned adjustments, Equation (4) becomes:

$$\log P^*_{ijt} = \beta_0 + \sum_{k=1}^{K}\beta_k \log(F_{k,i0}) + \sum_{l=1}^{L}\beta_{K+l}\log(C_{l,j0}) + \sum_{m=1}^{M}\beta_{K+L+m}\log(S_{m,ij}) + \sum_{k=1}^{K}\beta'_k[\log(F_{k,it})-\log(F_{k,i0})] + \sum_{l=1}^{L}\beta'_{K+l}[\log(C_{l,jt})-\log(C_{l,j0})] + \sum_{i=2}^{I}\gamma_i FD_i + \sum_{j=2}^{J}\gamma_{I+j} CD_j \quad (6)$$

which is then substituted into Equation (3) as before.

4. DATA DESCRIPTION AND MEASUREMENT

4.1. Sample composition

Information on post-entry performance was available for all entries made from the late 1980s onwards by the top 75 European grocery retail firms towards other Western and Eastern European markets. In what follows, we briefly describe and motivate the different dimensions of the data set: (1) the sample of firms, (2) the scope of host or target markets, and (3) the observation window.

Foreign entries made by the top players in the grocery retailing industry are considered, provided that these involved the firms' food operations. The latter restriction is imposed to obtain a more homogenous sample; it eliminates e.g., the comparison of foreign market entries in the computer business (e.g., El Cortes in the Czech Market) with entries in the do-it-yourself business (e.g., Metro in Greece). Within the food

retailing sector, 45 of Europe's top 75 players, coming from 12 different home markets, made one or more international entries over the considered time span.

Over 160 of these entries were directed toward other (Western and Eastern) European countries. We restrict ourselves to entries into European markets as cross-continental moves are still quite rare, often restricted to a few firms, and either very recent or scarcely documented.[5] Still, the sample incorporates international entries into 24 different host countries that cover both West and East European markets.[6]

Finally, we consider all international entries made from the late 1980s until the end of 1998. It is generally accepted (see, e.g., Barth, Karch, McLaughlin and Smith Shi 1996) that the grocery retailing industry has experienced two internationalization waves. A first wave, situated in the 1970s and early 1980s, consisted primarily of expansion into adjoining countries and typically involved equity investment or acquisition. The second wave, starting in the late 1980's and still accelerating, also involves movements beyond a retailer's established trading area, and also comprises greenfield expansion and joint ventures. It is the latter, still ongoing, wave that is studied.[7]

Information on the internationalization decisions of the different firms was obtained from *M+M Eurodata*, and was extensively cross validated through searches of Reuters, company web sites, annual reports, and local trade publications (e.g., *Distributie Vandaag* for Belgium or *Points de Ventes* in France). All international entries through greenfield expansion and acquisitions were considered,[8] while joint ventures with an international partner were included when a participation of more than 50% is taken.

Table 1 presents summary information on the international entries considered in our sample. In order to keep the table manageable, we grouped host and home markets into meaningful broader categories; for our subsequent empirical analyses, however, both the dependent and independent measures are considered at the country level (see below for a details).

Insert Table 1 about here

4.2. Variable operationalization

4.2.1. Post-entry performance.

In this study, two performance indicators, (1) an output and (2) an efficiency measure, are used to evaluate a retail subsidiary's post-entry performance. The output dimension is captured through the total annual sales series of the foreign subsidiary, that is obtained by adding the sales of all outlets the chain has in that country (all sales are expressed in Euro, and deflated to a common base year).[9] Efficiency is typically operationalized as an output to input ratio (Bonoma and Clarck 1985), where the inputs represent the investments into the foreign operations. We operationalize the latter through the total number of outlets opened, resulting in a sales per outlet efficiency measure.

Within marketing, *output measures* such as sales (Green and Ryan 1990; Shankar et al. 1998) and market share (Kalyanaram et al. 1995) are most often used to assess post-entry performance. We focus on the former, as it has been argued that the incumbents' share series are more sensitive than their sales to the entry of new players, especially in the first years after entry (Miller, Gartner and Wilson 1989; Vanderwerf and Mahon 1997), and particularly in emerging markets (Vanderwerf and Mahon 1997). Moreover, Shankar et al. (1998, p. 57) have recently argued that models based on sales are more appropriate than market-share models to assess the impact of entry decisions, as the latter do not result in market-potential estimates.

In a retail context, a number of physical output measures have been proposed to quantify the performance of established chains/outlets, such as the number of transactions performed, the number of items sold, the value added, and sales (see e.g. Bucklin 1978). Ingene (1982) discusses the pros and cons of each of these output measures. He concludes that the usefulness of each measure depends on the researchers' objectives, but that, in general, sales can be considered a 'good measure' of retail performance (p.77).

To assess a firm's economic performance, *efficiency* measures are often thought to be a valuable alternative/complement (Caves 1980). While intuitively appealing, output to input ratios have been used only rarely thus far to evaluate post-entry performance (see Anderson and Gatignon 1986 for a rare (conceptual) exception). In the retailing literature, however, efficiency has been a standard way to evaluate the performance of established outlets and chains (see, e.g., Thomas, Barr, Cron and Slocum

1998). A critical issue in this respect is the selection of the relevant input series. Previous research has considered, among others, the number of labor hours, the number of employees and the square feet of selling space to compare the efficiency of operations across individual stores (see e.g. Bucklin 1978; Donthu and Yoo 1988). To assess the drivers and performance consequences of (foreign) chain expansion, the number of outlets opened has been argued to be the relevant input measure, as it reflects the level of commitment of the parent company to establish a significant and visible presence in the host market (see, e.g., Barros 1995, Hultman and McGee 1989; Larsen, Van Ackere and Warren 1997; Miller and Parkhe 1998, Ursacky and Vertinsky 1992). In this study also, we use the cumulative number of outlets opened, but in Section 5.4. we assess the sensitivity of our substantive findings to this choice of input measure. Some summary statistics on both performance measures are reported in Table 2.

Insert Table 2 about here

Given our interest in estimating long-term, asymptotic performance levels from aggregate growth models, the question arises how many data points are needed for reliable estimates. In the context of the Bass model, Schmittlein and Mahajan (1982) suggest to either have more than 10 data points per entry or observations past the inflection point. As illustrated in Figure 1, the inflection point of the two performance measures lies around the fourth year after entry,[10] and many observations past this inflection point are available.

Insert Figure 1 about here

4.2.2. Strategic entry decisions

Order of entry. We define entry timing as the order in which a retailer entered a foreign market relative to the other foreign players in that market.[11] There is high variability in this entry-decision variable. The mean is approximately 6, i.e. on average, retailers expanding abroad not only have to compete with the local incumbents, but also with 5 other international players. Some entrants, however, did not yet have to deal with other international players at the time of their entry (min=1), while others had to cope with up

to 25 international retail investors (max=26), as was the case for the late entrants in Poland.

Size of entry. To measure the scale of entry, we use the initial number of outlets at entry (see, e.g., Boeri and Bellman 1995). In our sample, the average is 9 to 10 outlets, with a range from 1 to 97 stores. Apparently, international entry is, on average, undertaken with a size exceeding the minimum efficient scale of seven suggested by Kumar (1997), but several entries occurred at a sub-optimal scale.

Mode of entry. To capture the mode of entry decision, three dummy variables are specified that indicate whether a retailer entered through greenfield operations (67% of all entries), a joint venture (19%) or through an acquisition (15%). These figures confirm that the second internationalization wave in the retailing industry is mainly characterized by greenfield operations, as pointed out by Barth et al. (1996). To assess the long-run impact of the entry-mode decision, greenfield operations will be used as the baseline group in our model.

Product adaptation: Three dummy variables are created to measure the level of adaptation (or fit) of the selected store format to local host-market conditions. A first dummy variable registers whether the store format is new to the host market, where new is defined as a format that commands less than 33% of the current host-market retail sales. A second dummy captures whether the store format is already fairly well accepted, representing between 33 and 66% of current retail sales. The third dummy variable is taken as the base line group, and describes whether entry happened with the most widely accepted store format (more than 66% of current retail sales). The third category is used as baseline for estimation purposes.

Diversification. To measure whether an entry can be considered a diversification to the parent firm's operations, a dummy variable records whether entry occurred with a store format different from the parent firm's dominant store format in the home market. Of all entries, 34% represents a diversification vis-à-vis the home market operations.

4.2.3. Control variables

Parent firm skills and resources. To assess the influence of the parent firm on the long-term performance of its foreign subsidiary, three indicators are included: (1) the sales of

the parent firm to measure its size, (2) the number of markets a retailer is operating in world-wide, as a proxy for the scope of international experience, and (3) the share of private labels in the parent retailer's home assortment. The impact of these resources is evaluated at the time of entry (fixed) and as the deviation from this initial value (time-varying). The mean value at time of entry for the parent firm's size totals 11,627 thousand Euro (range 2,124-54,594). The average number of markets in which a retailer is already active prior to the new entry is approximately 4 (range: 0-24), and the average share of private labels in the total assortment equals 26% (range: 0.01%-94%). Table 2 summarizes the descriptive statistics for both the strategic entry variables and all control variables.

Host market attractiveness. To measure host-market attractiveness, three indicators were used: (1) GNP per capita, (2) the number of inhabitants in the host market, and (3) the sellers' market concentration, captured through the Herfindahl index.[12] Each of these operationalizations has frequently been used to describe a market's prosperity and/or potential; see e.g. Dekimpe et al. (1998) and Lambkin (1992). The required information on each of these variables was obtained from the Worldbank Statistics (World Atlas 1988-1998). To assess the impact of these host-market characteristics, we again included both the time-invariant value of all three measures at time of entry and their annual evolution, measured as deviations relative to the entry-year value. The average initial value across all entries for GNP per capita, population and concentration amounted, respectively, to 10,996 Euro (range: 1,250-48,440), 28.9 million inhabitants (range: 0.4-148.9), and a Herfindahl index of 0.05 (range: 0.0-0.45). The average deviations over time were relatively small compared to both their value at time of entry (GNP per capita: 768.81; Population: 0.13; Herfindahl index: 0.02) and the across-entry variation. This confirms Dekimpe et al.'s (1998) conjecture that the within-country variation in international diffusion studies is likely to be an order of magnitude smaller than the cross-country variation.

5. EMPIRICAL FINDINGS

To address our main research question, whether strategic entry decisions have an impact on long-run post-entry performance, three model specifications are estimated. First, we

link the long-run market potential to the entry decisions without explicitly controlling for parent-firm skills and resources or host-market attractiveness. These are, however, implicitly reflected in the fixed-effects correction that we incorporate in each specification (Model I). The second model adds the initial values of the firm- and host-market control variables, i.e. the values observed by the parent firm at the time of entry (Model II). When assessing the potential long-run success of an envisioned new entry, or when evaluating the threat of a competitive entry, such a model provides an obvious benchmark. Finally, we add the changes in the control variables between the time of entry and later points in time (Model III). This model will provide the most stringent test on the long-run impact of the entry decisions: if actions taken after entry ($F_{k,it}$-$F_{k,i0}$) along with the intrinsic attractiveness of the host market (captured now through both initial level $C_{l,j0}$ and later growth, $C_{l,jt}$-$C_{l,j0}$) are what really drives post-entry performance, then we should no longer observe a significant relationship between entry strategies and long-run performance (Green et al. 1995). Parameter estimates for these three models are given in Table 3.

In terms of fit, the model with only the fixed-effects dummy variables already explains 73 and 50 percent of the variance in, respectively, sales and efficiency, and therefore offers a more realistic benchmark than a pooled Gompertz model without any correction for parent-firm and host-market variability (which explained 50 and 10 percent of the variation in sales and efficiency). Adding the strategy variables (Model I) significantly improved this proportion to 0.90 and 0.81, respectively. The strategy variables therefore capture in both instances 62% (17/27 and 31/50) of the variance left unexplained by the fixed-effects model. Adding the control variables (Models II and III) results in a further improvement of a few percentage points in R^2 (to, respectively, 0.93 and 0.84 in Model III).

Insert Table 3 about here

5.1. Sales performance

In terms of long-run sales performance, we consistently observe a significant long-run impact for three entry decisions: the order of entry (H1), the size of entry (H2), and the

newness of the store format (H4), where entries with a format that is new to the host market tend to better received than entries with well-established formats (H4a). Even though some previous studies (Li 1995; Luo 1998) have found a short-run performance impact for the mode of entry (H3), our findings indicate that this impact disappears in the long run. Finally, for entries with a diversified store format, we find the hypothesized negative impact in all three models (H5), even though this impact stays (marginally, Model III) insignificant. As such, a higher long-run post-entry performance is expected when entering early, with multiple outlets, and using a store format that is relatively new to the host market.[13]

As for the relative importance of these three entry decisions, we present the standardized coefficients associated with Model III in Table 4. The timing of entry decision and the extent of format adaptation to local market conditions are the two most important drivers of long-run sales performance, with standardized coefficients (0.26 and 0.28) almost twice as large as the coefficient for the size decision (0.15).

Insert Table 4 about here

Two of the control variables have a significant positive impact in Model II: international experience at entry (0.57; t=1.90), and (marginally) GNP/capita (1.77; t=1.63). When incorporating both the initial value and the post-entry evolution in these control variables (Model III), we find that GNP/capita at entry stays a good predictor of future long-run performance (2.12; t=2.01). As for the parent-firm skills and resources, we first observe that parent-firm growth has a positive impact on the future evolution of its foreign subsidiaries (0.38; t=2.34). While we did not formally investigate the underlying causes of this effect, one could envision that the subsidiaries benefit, among others, from more favorable supplier conditions or better financing terms for further outlet expansion. Second, international experience, while initially positive (cfr. supra) becomes a liability when continued past entry (-0.66; t=2.02); this suggests that spreading resources across multiple additional foreign entries (Sharma and Kesner 1996) or the fact that management's attention tends to be devoted mostly to more recent entries hampers the long-run growth potential of the individual operations.

5.2. Efficiency

In terms of the impact of the strategic entry decisions on the subsidiaries' asymptotic efficiency level, we again find very consistent findings across all three model specifications. As for sales performance, both entry timing (H1) and the newness of the format (H4) have a persistent impact on efficiency, while the mode of entry (H3) again shows no significant impact. In contrast, the size of initial entry, which had a significant impact on sales performance, does not affect long-run efficiency (H2). Finally, entry with a diversified format (H5), which already had a consistent negative (albeit not significant) impact on sales performance, has a highly significant negative impact on efficiency ($|t|$=2.78; Model III). This means that, even if one could obtain the same long-run sales level when entering with a less familiar store format (measured vis-à-vis the parent firm's home operations), more input resources will be needed to achieve this. In terms of the entry decisions' relative impact, we find, similarly as for the sales measure, that the timing decision has the largest impact, while the extent of product adaptation (to the host market) and diversification (relative to the home market) now have a comparable effect (see Table 3, column 3).

Several interesting findings emerge for the control variables. As before, the presence of international experience when entering a new host market has a positive impact on long-run performance (0.77; t=3.35), while further international expansion after entry impacts efficiency negatively (-0.42; $|t|$=1.91). Large private-label shares in the home market have, as expected, a negative influence on the efficiency of the foreign operation (-4.4; $|t|$=2.15). As argued in Section 2, a high private-label share may hamper the development of the foreign operations because it may reflect commitment to the home market, may make supplier relationships more complex, and, on the customer-side, requires them to switch not only stores but also brands. In terms of the host-market characteristics, we again find a significant positive impact of GNP/capita in Model III, both in terms of the initial level (1.60; t=1.63) and in terms of the subsequent evolution (0.21; t=2.33). Finally, the concentration in the host market, while insignificant in terms of long-term sales performance impacts the efficiency of the foreign subsidiaries (4.59, t=2.08; 2.72, t=2.03). As larger values of the Herfindahl index reflect a less competitive

market structure, higher efficiency (e.g., the same sales level with less resources) is obtained in less competitive markets.

6. VALIDATION

To assess the robustness of our substantive conclusions, we conducted several validation checks. Specifically, we assessed the sensitivity of our results to (1) the length of the observation window, (2) the model specification, (3) the imposed exogeneity of the entry decisions, and (4) the input measure used in the efficiency calculations.

6.1. Sensitivity to the length of the observation window

Recent empirical and simulation evidence from Van den Bulte and Lilien (1997) shows that the estimated asymptotic performance may be sensitive to the last available observation. This was formally demonstrated in the context of the well-known Bass model, but similar patterns were expected in other non-linear specifications, such as the Gompertz model. To assess the robustness of our substantive findings to the length of the observation period, we re-estimated our model for a different end point, i.e. we used one observation less for every entry (see Dekimpe, Van de Gucht, Hanssens and Powers 1998 for a similar practice).

As shown in Table 5, our substantive conclusions on the long-run impact of the *strategic-entry decisions* are robust in terms of sign, magnitude and significance. In terms of the foreign entry's sales performance, we again find support for the long-run impact of the timing (H1), size (H2), and adaptation (H4) decision. And again, we find no evidence of a long-run impact of the mode of entry (H3). In addition, the negative impact of a more diversified entry (H5), which was marginally significant becomes more significant ($|t|=1.94$). In terms of the long-run efficiency level, two entry decisions are again found to have a continuing impact, i.e. the timing (H1) and diversification of the entry (H5). As for the full sample, entry size (H2) and mode of entry (H3) do not have a long-run impact on efficiency. For the product adaptation decision (H4), we find that the sign and magnitude of the estimated impact is very robust, but that the significance level drops.

Insert Table 5 about here

6.2. Sensitivity to the choice of the Gompertz model

To ensure that our substantive findings are not idiosyncratic to the adopted (Gompertz) model specification, we compared our parameter estimates to those of an alternative growth-model specification. Specifically, we considered the logistic model (Hanssens, Parsons and Schultz 2000), i.e.:

$$P_{ijt} = \frac{P^*_{ij}}{1 + exp[-(\alpha_0 + \alpha_1 t)]}, \qquad (7)$$

with P_{ijt} the performance of entry (i,j) at t, P^*_{ij} its asymptotic performance potential, and t the time since entry.[14] Making the market potential P^*_{ij} time-varying and a linear function of both the strategic entry decisions and the parent-firm and host-market control variables described before (i.e., substituting the asymptotic performance equation into Equation 7), a special case of the smooth transition regression model described in Granger and Terasvirta (1993, Section 4.2) is obtained (see Franses 1998 for a marketing application). The fit of the logistic model is somewhat lower (R^2 = 0.84 versus 0.93 for the sales model; 0.76 versus 0.84 for the efficiency model) than for the Gompertz specification; yet, the substantive findings are very similar to those discussed before (see Table 5, columns 3 and 6 for details).

For the sales measure, the timing (H1), size (H2) and product adaptation (H4) decisions again have a long run impact, while the mode of entry is once more found to be insignificant. Entry with a diversified format, already marginally significantly negative in the Gompertz model, became more significant in the logistic specification (|t|=2.50). In terms of the efficiency measure, no sign switches were observed for the strategy parameters, and a similar picture as before emerged in that timing (H1), although now only marginally significant, product adaptation (H4) and diversification (H5) have a significant impact on the asymptotic efficiency level, while size of entry does not. The only difference observed vis-à-vis the Gompertz model is the significant positive impact for joint ventures.

6.3. Sensitivity to the exogeneity assumption

In our model specification, we assumed the strategic entry decisions to be exogenous. But Lieberman and Montgomery (1988) have argued that these decisions reflect an intrinsic

choice on the part of the firm that may be driven by its performance expectations (see Moore, Boulding and Goodstein 1991 for a detailed discussion): based upon a comparison of resources and opportunities, the firm may form certain expectations about both post-entry performance and its dependence on certain entry decisions, and these expectations may guide the eventual selection of strategies. As such, certain unobservable determinants of the entrant's performance (expectations) may no longer be independent of the entry decisions, causing a correlation between the latter and the error term of Equation (5). In such a situation, the entry decision should be treated as endogenous rather than exogenous, and single-equation estimation techniques will lead to biased estimates.

Following Moore et al. (1991), we tested for the endogeneity of the entry decisions through the Hausman-Wu specification test (see Steward 1995 for implementation details). Specifically, in the test equation (i.e. Equation 5), we included both the potentially endogenous variables (i.e., the strategic decisions) and instruments for these variables, where the latter are derived as the forecasts from an auxiliary regression linking an individual entry decision to the control variables at the time of entry. A test on the significance of these instruments then constitutes the exogeneity test. This test was implemented on a decision-by-decision basis, as summarized in Table 6.[15] Interestingly, the tests do not reveal any violation of the assumed exogeneity of the decision variables. Put differently, we do not find evidence that entry decisions are driven by management's long-run performance expectations.

Insert Table 6 about here

6.4. Sensitivity to the choice of efficiency measure

A critical choice when working with efficiency measures is the choice of input measure. In previous sections, results were presented for sales per outlet. Another frequently used efficiency measure captures sales per square meter (Bucklin 1978). As illustrated in the final column of Tables 4 and 5, our results were extremely robust to this alternative operationalization, in sign, significance and relative magnitude of the different effects.

7. CONCLUSION

In this paper, we investigated the long-run performance consequences of five aspects of international expansion: the time, size and mode of entry, the format adaptation to local market conditions, and the diversification of the format relative to the parent firm's home operations. We improved on previous work in several respects. First, by simultaneously considering an extensive set of choices made at entry, better insights into their relative impact were obtained. Second, by considering the asymptotic performance in a Gompertz growth curve, we had an explicit focus on the decisions' long-run performance consequences, and made our substantive conclusions time-subscript independent. Third, the scope of our data set, with entries in more than 20 West and Eastern European markets, allowed us to extend the predominantly North-American knowledge base. Fourth, our study was not positioned in a consumer goods or industrial setting, but considered with the retailing industry one of today's most important service industries. Finally, we extensively validated our conclusions across a variety of alternative specifications, and found our substantive findings to be very robust.

On a substantive level, most of the largest retailers have internationalized their operations, but many of them are still struggling to develop the necessary competencies to compete in this more global arena. Our results can offer them guidance in several ways. First, we consistently find that several of the strategic decisions made at entry continue to influence the foreign operations' post-entry performance, both in terms of long-run sales and of long-run efficiency. Especially the time (order) of entry appears to be a prime source of persistent competitive advantage. Hence, firms still considering a potential entry towards "popular" destinations such as Poland or Bulgaria, where over 20 foreign competitors have preceded them, should realize that they face a considerable barrier to long-run success because of this tardiness. It is fair to say that not just in those two countries, but actually in most European markets, the most attractive "pole positions" have been taken for some time. Later entrants will therefore have to take recourse to other (less effective) instruments to compensate for the ensuing disadvantage. Outside Europe, in contrast, the internationalization wave is just taking off. If our findings generalize to these cross-continental moves (cf. infra), a wait-and-see attitude is not recommendable.

Second, companies often find themselves in a bind on which retail format to choose when entering a foreign market. This choice can be dictated by demand (adaptation to host-market conditions) or supply (expertise in the home market) considerations. Ideally, both forces will favor the same retail format. If not, our findings indicate a relatively greater importance of the demand side, again irrespective of the performance dimension considered.

Third, other entry decisions that have been argued to affect the foreign entries' short-term performance, such as mode of entry, are no longer a critical driver of their long-run performance, at least for the two performance dimensions considered, sales and efficiency.

Fourth, some interesting findings emerged from our control variables. Private-label activity, for example, has been argued to be a main source of success in the domestic market. Our findings confirm Kumar's (1997) conjecture that when taking the retailers' operations abroad, this may prove to be a liability rather than an asset, which adds an interesting dimension to the private-label literature. More research is needed, however, on its net impact on the combined, domestic and international, performance of the retail chain. As for the chain's international experience, we argue that some experience at the time of entry is beneficial, but that a further spreading of the company's resources across too many different countries may start to harm the long-run growth potential of each individual entry. International expansion may indeed be an adequate answer to the saturation and increasing competition in one's home market, but care should be taken not to stretch this too far.

Several areas for future research remain wide open. First of all, while we controlled for the parent firm's skills and resources, we did not control, at the time of entry nor in subsequent years, for the subsidiaries' marketing actions and retail mix. Including the store format as a rudimentary proxy for this retailing mix did not affect our substantive findings. Still, the inclusion of a richer set of descriptors, along with their evolution over time, would be advisable. Second, we focused attention on the long-run performance consequences of the strategic entry decisions. Apart from this "end point", one may also want to study what drives the trajectory or evolution towards this long-run equilibrium, i.e. the impact of the entry decisions on both initial post-entry performance

and subsequent growth. An extension of our modeling approach to jointly consider all three performance aspects could therefore be envisioned. Finally, our data describe the second internationalization wave in the retailing industry, in which many firms no longer limit their international expansion to neighboring countries. Cross-continental moves, however, are still quite rare, and certainly fairly recent. As such moves are expected to become more prominent, it would pay to assess the generalizability of our empirical findings to this more global arena.

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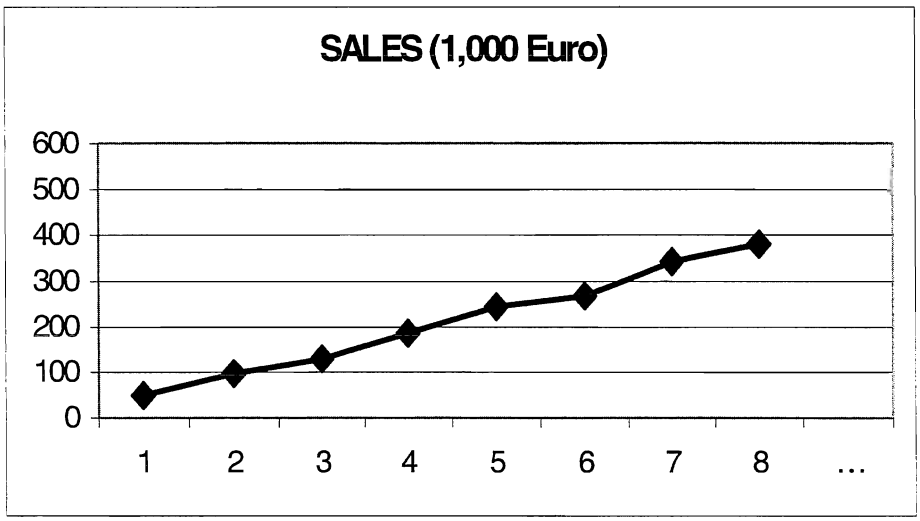
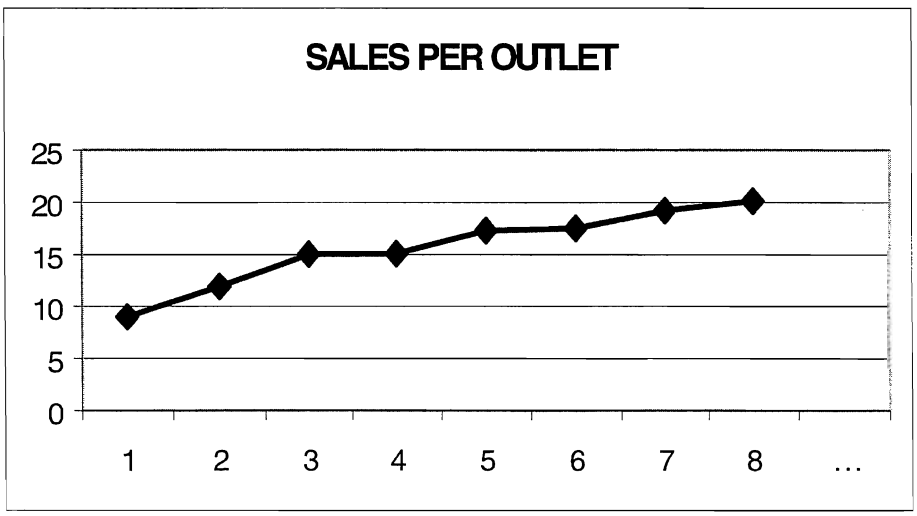
Figure 1: Sales and efficiency evolution (means)





Note: The numbers of observations on which the mean is computed at each different year after entry (t=1,8) amounts respectively to 161, 139, 116, 90, 70, 50, 35, and 24. The total number of observations in the data set is 706. For some of the earliest entries, more than eight observations were available. When plotting their individual performance graphs, a similar S-shaped pattern was obtained.

Table 1: Overview retail entries included in study

Host region / *Home region*	*Benelux*	*Central Europe*	*France*	*Germany, Austria and Switzerland*	*Russia and Baltic States*	*Scandinavia*	*Southern Europe*	*South East Europe*	*UK and Ireland*	*Total*
Benelux e.g. Ahold (NL) Delhaize (B) GIB (B)	1	18	4	0	1	0	7	0	0	31
France e.g. Carrefour Intermarché Casino	3	11	0	2	0	0	22	0	1	39
Germany, Austria and Switzerland e.g. Metro (D) Migros (CH) Spar (A)	3	33	7	4	0	1	12	7	3	70
Scandinavia e.g. Kesko (FIN) Reitan (N) Dansk Supermarked (DK)	0	5	0	1	7	2	0	0	1	16
Southern Europe e.g. JMR (P)	0	2	0	0	0	0	0	0	0	2
UK and Ireland e.g. Tesco Booker Costcutter	0	8	0	0	0	0	2	0	1	11
Total	7	77	11	7	8	3	43	7	6	169

Note: The Benelux countries are Belgium, The Netherlands and Luxembourg. The Scandinavian countries include Denmark, Finland, Norway and Sweden. The Southern European countries investigated in this study are Greece, Italy, Spain and Portugal. The Central European countries are The Czech Republic, Hungary, Poland and Slovakia. The South Eastern markets under investigation are Bulgaria, Romania and Slovenia.

Table 2: Descriptive statistics

	Mean	*Standard deviation*	*Range*
Independent variables			
• *Entry decisions*			
Order of entry	6.31	5.34	1-26
Size of entry	9.63	15.23	1-97
Mode of entry*			
Greenfield	66.80%	-	-
Acquisitions	14.60%	-	-
Joint ventures	18.60%	-	-
Product/format adaptation*			
New	37.50%	-	-
Medium	37.50%	-	-
Wide spread	25.00%	-	-
Product/format diversification*			
Diversified	33.90%	-	-
Not Diversified	66.10%	-	-
• *Controlling variables*			
Firm size (mio. Euro)			
at entry	11,627.01	10,221.00	2,124-54,594
average deviation	4,181.63	6,721.03	-1,931-51,594
International experience			
at entry	3.86	3.89	0-24
average deviation	2.76	2.60	-2-14
Private label share			
at entry	0.26	0.22	0.01-0.94
average deviation	0.02	0.01	0.05-0.01
GNP/capita			
at entry	10,996.00	9,624.40	1,250-48,440
average deviation	768.81	987.24	-3,318-6,500
Population (mio. inhab.)			
at entry	28.90	26.70	0.4-148.9
average deviation	0.13	0.63	-1.8-6.5
Herfindahl index			
at entry	0.05	0.07	0.00-0.45
average deviation	0.02	0.02	-0.01-0.13
Dependent variables			
Sales (mio. Euro) (overall)	172.28	262.96	0.45-1,558
Efficiency = sales per outlet	13.84	20.49	0.09-99.25

*: 0-1 variables. We report the proportion of the observations having the value 1.

Table 3: Parameter estimates

	Performance = sales			*Performance = efficiency (sales per outlet)*		
	Model I	***Model II***	***Model III***	***Model I***	***Model II***	***Model III***
Strategic entry decisions						
• Order of entry (H1)	-0.21 (2.11)	-0.42 (2.32)	-0.42 (2.52)	-0.76 (1.91)	-1.53 (1.92)	-1.65 (2.03)
• Size of entry(H2)	0.15 (2.17)	0.20 (2.64)	0.20 (2.63)	0.09 (0.51)	0.11 (0.50)	0.12 (0.50)
• Mode of entry (H3)						
Joint venture	0.02 (0.11)	0.12 (0.32)	0.16 (0.48)	0.21 (0.75)	0.15 (0.68)	0.14 (0.63)
Acquisition	-0.04 (0.13)	-0.10 (0.26)	-0.19 (0.50)	-0.12 (0.32)	-0.06 (0.24)	-0.09 (0.37)
• Product adaptation (H4)						
New to host	0.56 (1.93)	0.74 (2.18)	0.89 (2.52)	0.41 (1.78)	0.33 (1.73)	0.37 (1.69)
Medium new to host	0.003 (0.001)	0.32 (1.20)	0.34 (1.26)	0.21 (1.19)	0.18 (0.97)	0.25 (1.25)
• Product Diversification (H5)	-0.21 (1.10)	-0.24 (1.21)	-0.29 (1.32)	-0.39 (2.50)	-0.35 (2.39)	-0.39 (2.78)
Parent firm S&R						
• *At time of entry*						
Size (sales)		0.21 (0.38)	0.34 (1.01)		0.27 (0.66)	0.47 (1.09)
International experience		0.57 (1.90)	0.52(1.02)		0.87 (3.99)	0.77 (3.35)
Private labels share		8.50 (0.27)	9.13 (0.29)		-4.16 (2.03)	-4.4 (2.15)
• *Evolution*						
Size (sales)			0.38 (2.34)			0.08 (0.67)
International experience			-0.66 (2.02)			-0.42 (1.91)
Private labels share			-2.93 (0.31)			-2.01 (0.29)
Host-market attractiveness						
• *At time of entry*						
GNP/capita		1.77 (1.63)	2.12 (2.01)		1.23 (1.37)	1.60 (1.63)
Population		3.91 (0.19)	2.07 (0.69)		0.82 (2.01)	0.29 (0.21)
Concentration		0.32 (0.16)	3.92 (1.34)		2.77 (2.22)	4.59 (2.08)
• *Evolution*						
Gnp/capita			-0.09 (0.72)			0.21 (2.33)
Population			0.07 (1.21)			-0.02 (0.5)
Concentration			1.41 (1.39)			2.72 (2.03)
R^2	0.90	0.92	0.93	0.81	0.83	0.84

Note: It-valuesl are given betwecn parentheses. Because of space limitations, we do not report parameter estimates for the fixed-effects dummy variables, nor for the intercept and growth parameter.

Table 4: Standardized coefficients associated with Model III

Entry decision	*Sales*	*Sales per outlet*	*Sales per m^2*
• Order of entry (H1)	0.26	0.21	0.24
• Size of entry (H2)	0.15	0.11	0.09
• Mode of entry (H3)			
Acquisition	-0.01	-0.02	-0.01
Joint venture	0.01	0.04	0.06
• Product adaptation (H4)			
New to host	0.28	0.12	0.22
Medium new to host	0.14	0.09	0.14
• Product diversification (H5)	-0.06	-0.12	-0.15

Table 5: Validation

	Performance = sales			*Performance = efficiency (sales per outlet)*			
	Gompertz	*Logistic*	*Minus last observation*	*Gompertz*	*Logistic*	*Minus last observation*	*Gompertz Sales per m^2*
Strategic entry decisions							
• Order of entry (H1)	-0.42 (2.52)	-0.39 (2.90)	-0.55 (2.69)	-1.65 (2.03)	-1.20 (1.50)	-1.56 (1.61)	-0.22 (2.66)
• Size of entry (H2)	0.20 (2.63)	0.60 (2.60)	0.23 (2.61)	0.12 (0.50)	0.13 (0.49)	0.11 (0.62)	0.04 (1.33)
• Mode of entry (H3)							
Joint venture	0.16 (0.48)	0.24(0.82)	0.17 (0.38)	0.14 (0.63)	0.49 (2.21)	0.11 (0.41)	0.006 (0.1)
Acquisition	-0.19 (0.50)	-0.13 (0.50)	-0.09 (0.23)	-0.09 (0.37)	0.26 (1.06)	-0.12 (0.40)	-0.09 (0.6)
• Product adaptation (H4)							
New to host	0.89 (2.52)	0.89 (3.20)	1.29 (3.26)	0.37 (1.69)	0.58 (2.50)	0.27 (1.00)	0.30 (1.92)
Medium new to host	0.34 (1.26)	0.23 (1.02)	0.45 (1.36)	0.25 (1.25)	0.13 (0.71)	0.23 (1.03)	0.20 (1.51)
• Product diversification (H5)	-0.29 (1.32)	-0.44 (2.50)	-0.48 (1.94)	-0.39 (2.78)	-0.44 (2.90)	-0.56 (3.10)	-0.24 (2.50)
R^2	0.93	0.84	0.92	0.84	0.76	0.91	0.75

Note: For comparison purposes, we report the validation results obtained for model III. The parameter estimates for the control variables are not reported due to space limitations, but were also robust.

Table 6: Hausman-Wu exogeneity Chi-square test

Decision variable	*Sales*	*Sales per outlet*
Order of entry	0.001	2.03
Size of entry	0.001	3.62
Mode of entry		
Greenfield vs. joint venture and acquisitions	1.13	2.06
Joint venture vs. greenfield and acquisitions	0.09	1.27
Acquisitions vs. greenfield and joint venture	2.80	0.4
Product adaptation		
Wide spread vs. new and medium accepted	2.03	3.03
New vs. widespread and medium accepted	2.99	1.12
Product diversification	1.38	0.05

[a]: statistically significant at the 0.05 confidence level ($\chi^2(1)= 3.84$)

Note: For the binary variables, instruments were constructed on the basis of a median-split division of the probability forecasts of a logit model linking that variable to the value of the control variables at the time of entry.

Footnotes

[1] Exceptions include Green et al. (1995), who study the impact of timing and investment intensity, Mascarenhas (1997), who incorporates both the time and size of entry, Sharma and Kesner (1996), who consider the size of entry and extent of product diversification, and Li (1995) who examines the survival chances of foreign entries concentrating on both mode of entry and extent of diversification. Each of these studies, however, still considers only a subset of the aforementioned five strategic decisions.

[2] The sign of the expected impact is presented between parentheses.

[3] Indeed, international entry decisions are more of a centralized nature, where the firm's management controls to a large extent the timing and expansion of its foreign operations. In contrast, almost all previous international diffusion studies deal with decentralized processes, where the extent to which individual adopters are influenced by WOM and/or external communication is the main determinant of the resulting diffusion path (see Dekimpe, Parker and Sarvary 2000a, b for an extensive discussion on the issue).

[4] In case of 0-1 dummy variables, no log transformation is taken.

[5] E.g., 70% of the entries made into South America are attributed to Ahold, Carrefour and Makro, and 75% of all entries into South America were made during the last two years.

[6] The host markets considered in our sample are Austria, Belgium, Bulgaria, The Czech Republic, Denmark, Estonia, France, Great Britain, Germany, Greece, Hungary, Italy, Ireland, Luxembourg, Lithuania, Latvia, The Netherlands, Portugal, Poland, Rumania, Russia, Spain, Slovakia, Slovenia and Sweden.

[7] The distinct character of the two internationalization waves is further illustrated by the fact that in a full decade before our starting date, around 5 entries were undertaken towards the included European countries, as opposed to over 160 in the decade considered in our sample.

[8] The one exception being the take-over by Metro (D) of Makro (NL) in December 1997. In this case, the existing international operations of Makro were not double counted as new foreign entries by Metro.

[9] Such an aggregation is common practice when comparing performance across foreign entries (see, e.g., Hultman and McGee 1989; Tan and Vertinsky 1996).

[10] Similar graphs are obtained when looking at the performance evolution of most individual entries (rather than at the evolution of the mean performance), and are available from the authors upon request.

[11] Vanderwerf and Mahon (1997) report in their meta-analysis on first-mover advantages that most studies use a similar operationalization (i.e. one for the first entrant, second for the second, ...).

[12] To describe the competitive structure in the host market, only information concerning players who hold at least 1% of the grocery market was available. The Herfindahl index is therefore calculated based on the market shares larger than 1%.

[13] It is interesting to note that these substantive findings were unaffected when control dummy variables for the subsidiaries' store format (hypermarket, discount,) were included. This was also the case for the efficiency results.

[14] While both Equations (1) and (7) allow for an S-shaped evolution towards a saturation level, there are some important differences between both specifications. In the logistic model, a maximum growth rate is obtained when current performance is at 50% of the asymptotic performance level, as opposed to 37% for the Gompertz curve. As the true maximum need not coincide with either one, it is appropriate to test the sensitivity of our findings to this model property. In addition, the rate of growth is symmetric around the inflection point for the logistic curve, but not for the Gompertz model (Chow 1967). This asymmetry has been argued to make the Gompertz curve especially appropriate for modeling new product or venture performance, as the period of rapidly increasing sales has been found to often be shorten than the period where sales converge to their saturation level (Franses 1994). The logistic curve (with is absence of asymmetry) can be interpreted as a conservative benchmark against which the sensitivity w.r.t. the specific asymmetry pattern adopted in the Gompertz specification is tested.